

THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

# approach

September 2002



How Close Is Too Close?

Never Again

Overstaged and Underpowered

# approach

## The Naval Safety Center's Aviation Magazine

September 2002 Volume 47 No. 9

### On the Cover

An EA-6B attached to VMAQ-2 lifted off from MCAS Yuma on a tactical jamming training mission. Photo by Ted Carlson

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## Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

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Thanks for helping with this issue...

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# Editorial

I recently watched the movie, "The Legend of Bagger Vance." The young boy who served as the narrator talked about the game of golf, the beauty of the game, and the joy of being on a course. There is no offensive team, no defensive team—just you, the course, and the ball. Solitary.

That solitude offers advantages and poses problems. During a philosophy-of-sport class I once took, we debated the issues fair play and sportsmanship. How do you attain them? In most sports, officials oversee play and determine infractions to the rules. When a player pushes, trips or hits an opponent, the official blows the whistle, calls a foul and assesses the penalty. If the referee doesn't see the infraction, is it a foul? Players who compete at a high level know what they can "get away with" and what they can't. If the official doesn't call it, it never happened. The players play and the referees officiate.

Golf is different. The game is played to a different standard. Players are expected to impose penalties on themselves. Inherent in the game is a code of ethics that insists players police themselves. It's part of the game—a part of its fabric. Players—whether professionals or recreational—are expected to enforce the rules and record their correct scores. Sometimes an official may be present to interpret and assist, but the onus still is on the player. If a golfer can't find his ball, he will, on his own volition, take out another ball and assesses the penalty.

In "Bagger Vance," Rannulph Junuh calls a penalty on himself. Junuh's playing partners and the young boy look on as he explains how his ball had moved. He accidentally had moved it. It's a self-imposed penalty, whether the opponent saw the infraction or not. The game expects and demands it.

Now, back to centerline. Aviators are supposed to play by the rules. Do they? Training flights have an instructor overseeing the evolution. Checkride evaluators watch every move. But, the vast majority of flights aren't monitored. Who notes the infraction, who imposes the penalty? If something goes wrong, who makes the call? Naval aviators. You return from an eventful flight, give a full debrief, and disclose all.

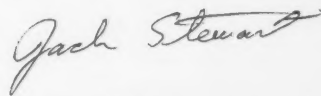
Disclosing all and the willingness to share it: That's what makes this magazine valuable in the aviation-safety arena. Those involved in naval aviation see the logic in making the score accurate. A false score in golf is just that—false. Naval aviators view problems in flight, mechanical or human, as items that need to be disclosed and shared. That's where the contributors to *Approach* come in.

You share your mistakes and your experiences, good or bad. By doing so, you not only provide an interesting "There I was" story, but you help to make sure the finest in our country don't duplicate your harrowing experience.

Just as a golfer calls it the way it is, you write it the same way. It's a matter of integrity. As they say in golf, it's "for the good of the game."

What you do is not a game, but when you contribute an article, it's definitely "for the good." The articles submitted to *Approach* tell great stories. Continue to share for the benefit of all who fly.

There's more, but I have a tee time.



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# Accept No Substitutes



By Lt. Stephen Lewis

Our mighty Orion was at FL195, in the eastern Mediterranean, in support of Operation Enduring Freedom. The flight engineer called out, "Chips light, No. 3," with no secondary indications the reduction gearbox could be coming apart. Once we secured the No. 3 engine and completed the emergency-shutdown checklist, the aircraft became stable. We coordinated our route of flight home with ATC. The copilot, a seasoned patrol-plane commander, then led a discussion of "what ifs."

With the No. 3 engine secured while at FL200, would our weight support a two-engine rate of climb if we were to have another engine malfunction that required shutdown? The answer was yes; we would have a 200-fpm rate of climb at that gross weight.


We secured the No. 3 engine because metal particles had accumulated on the magnetic plugs in the power section or reduction gearbox. NATOPS procedures call for a shutdown unless the emergency requires power. What conditions might occur that would require restarting the No. 3 engine? The pilot at the controls suggested an engine fire. The flight engineer agreed and added that an E-handle or power-lever vibration would be another reason to bring No. 3 back on line.

The No. 3 engine operates one of the two engine-driven compressors (EDCs), which control the air-conditioning and pressurization systems. A check of the No. 2 EDC showed it was capable of maintaining cabin pressure, and our altitude helped keep the aircraft equipment from

heating up. The PPC asked how we might handle a malfunction while on our only operating EDC. In that situation, we would alert the crew; coordinate a descent on oxygen, if necessary, to below FL100; and verify our minimum-operational-safe altitude (MOSA) en route with the navigator.

Moments later, as if on cue, we had a flickering and then steady press-low light on the No. 2 EDC. As we just discussed in our "what if" session, the copilot verified MOSA with the navigator and requested a descent to FL090. The flight engineer began to depressurize the aircraft to prevent a rapid decompression from occurring if the EDC failed during the descent. Below FL100, the flight engineer disconnected and dumped the No. 2 EDC, and we continued to our destination at NSA Souda Bay.

The navigator continued to provide MOSA updates and outlined a route to the north of Souda to avoid a mountainous terrain south of the airfield.

We had an uneventful three-engine landing at Souda. The crew handled the scenario well, partly because of our in-flight discussions of compound malfunctions. Rapid decompression can cause disorientation at best and, at worst, loss of aircraft and 11 aircrew. NATOPS is not a substitute for sound judgment, and it reminds us that "compound emergencies, available facilities, adverse weather or terrain, may require modification of the procedures contained within." We experienced such an occasion, and, through sound CRM, we were fortunate enough to bring the aircraft and crew home safely. 

Lt. Lewis flies with VP-10.



**T**he smoke from our burning main-mounts was not thick enough to obscure the sparkling Pacific and the small islands offshore. I couldn't help thinking—while giving a thumbs-up to the fire trucks rolling up—had things gone as planned, those islands now would be in our mirrors.

Tower told the Tomcat on the runway, "Cancel position and hold, and taxi clear." The Hercules at six miles was told to expect a low approach at or above 500 feet because an F-4 was on fire on the left side of the departure end. I felt like running my seat down all the way. However, my curiosity on the status of firefighting efforts won out, and I kept my seat up to peer over the canopy rail.

The firefighters quickly worked their magic, and the smoke turned to steam, then dissipated. The fire was out and foam was under our jet. As the engines stopped, the firefighters cleared my pilot to shut down and to lower the boarding ladder. While we safed our seats and unstrapped, I was amazed my pilot still had the presence of

mind to yell, "Two, one, open," to synchronize our canopies—a fact he vehemently denies and proof old habits die hard. I thought the cool canopy opening probably wouldn't smooth over our current situation.

Once on the ground, we realized that, although the pilot valiantly had tried to get off the runway, our tail still was hanging over the hold-short line. A glance at the puddled rubber and fused-brake assemblies confirmed that the jet would remain in place a while longer. With a jack, a couple of dollies, a tow bar, and a tractor, the jet was moved after 45 minutes. We caught a lift back to the hangar.

After lots of questions and some uncomfortable time standing tall, we were privileged to brief an AOM on the details that led to our unfortunate lack of flight time. We had briefed as a single, to launch on a ship's-services mission. Our task was to provide radar calibration and tracking training for a small boy in the sea range.

The brief was standard, covering all phases of flight, including mission-specific comms and



# Smoke Gets in Your Eyes

By LCdr. Brad Botkin



profiles. Man-up, start, and taxi were all standard. We encountered our first problem on the takeoff roll.

In blower, passing 90 knots, we noticed a left yaw and the pilot reported the left-engine nozzle was partly closed. We aborted the takeoff for a burner blow-out. Because we still were relatively slow and had over 8,000 feet of runway left, neither the drag chute nor the hook were necessary to stop comfortably. We taxied off the runway and discussed our options.

A burner blow-out in the F-4 was not uncommon, and the maintainers often performed a visual inspection of the engine. Flight crews would verify normal operation on subsequent flights. With this in mind, and, after discussing our options on base radio, we decided to taxi to the departure end and try again. To meet our range times, we expedited our taxi and were cleared for takeoff within 10 minutes.

As we accelerated through 100 knots, we noticed the same yaw and nozzle indications and aborted the takeoff. The jet again slowed normally. The drag chute and hook were not necessary. After passing over the long-field gear, however, our deceleration began to ease up. I waited several seconds, thinking my pilot was trying to get closer to the end so he could expedite our exit. I then suggested we slow a bit. His "I'm trying" response didn't give me a warm and fuzzy, so I asked what was wrong. He said the brake pedals felt normal, but he had the brakes on full. He had released and reapplied them, but we weren't slowing normally.

As the end of the runway approached, we were under 20 knots. With the lack of a significant overrun and no overrun gear, the pilot decided to keep the brakes on and to steer left

into the large hold-short area at the end of the runway. As we started the turn, we felt the side G of a faster-than-normal turn. We were rewarded with a loud bang and left wing down as the left mainmount blew. On the positive side, the increased drag of the blown tire tightened our turn, and we slowed to a stop.


As we breathed a collective sigh of relief, the right wing started to settle, and we soon were wings level again.

As we told tower about the blown tire and requested assistance, we saw wisps of sooty smoke curling around the starboard wing. We told

tower our wheels probably were on fire, as well.

How did we end up with smoke in our eyes and egg on our faces? We had overlooked that our first abort had put a significant amount of heat into our wheel assembly. With our second abort, we had exceeded the wheel assembly's heat capacity. Unable to transfer heat to the surrounding components, the brakes lost most of their stopping friction toward the end of our roll out.

Our left mainmount blew when the faster-than-normal turn decreased the weight on the wheel, until it lost traction and locked, bull's-eyeing the tire. The right mainmount-fuse plug melted from the wheel-assembly heat and, as designed, deflated the right tire.

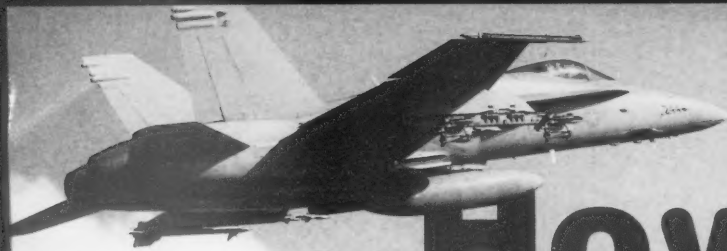
What did we learn? Regardless of your platform, the laws of heat transfer and physics remain the same. Knowing you can exceed your aircraft's braking-heat capacity is key. What can you do differently on an abort when you suspect decreased braking capacity? Don't put yourself in the position of having to abort again. Brief that the hook will be mandatory in case of a second abort. Avoid turning while braking at speeds faster than a fast walk. If you have to turn and brake at higher speeds, ease braking on the inside wheel of the turn. Obviously, you will need nosewheel steering to keep the turn going when you take this action. 

LCdr. Botkin currently flies with VAQ-139. He flew F-4s when assigned to Weapons Test Squadron, Naval Station Ventura County, Calif.

We were rewarded with a loud bang and left wing down as the left mainmount blew.



Photo by PH2 Chris Holmes



# How Close

By Lt. David Bowen

**I**t was the perfect hop. Red air lead, KC-10 fuel opportunity, and about 10 minutes to get in a good fight before returning to the boat. My wingman, a nugget pilot who had been in the squadron over a year, would join me for the hop. This good deal was the kind that puts a sinister grin on your face when you get up in the morning and read the flight schedule. We briefed the game plan and contingencies, grabbed some chow, and walked to the flight deck to a pair of FA-18s.

After a few uneventful air-to-air engagements, my wingman and I got in a quick 1 v 1, to burn down the robust fuel load we still had and to have a little fun doing it. We fought a good fight down to the hard deck, knocked off, and headed home. My tanks indicated about 6,500 pounds, more than enough gas to get us home and make maximum-ramp weight. We couldn't have another engagement because recovery time fast approached. I scoffed at the thought of dumping extra gas, rather than using it for something worthwhile. Fuel would become an issue in a matter of minutes.

We headed for the marshal stack. I initiated a running rendezvous and checked us in with strike. Everything seemed normal. My wingman joined on bearing line from a mile away. The descent checks were completed, and I began to savor the thought of finishing this hop with a pair of OK 3-wires. Once I was convinced we were headed to the right piece of sky, I started down to the low-holding stack. I steadied the aircraft, checked the numbers in the heads-up display, and took one more look at my port wingman—nothing unusual. He was closing and was inside a half mile. I could not have predicted what would happen in the next few seconds, or the emergency I would have to face.

After checking our progress and location, something caught my peripheral vision to port. When I turned my head to look, I felt an amazing surge of adrenaline, as my brain registered the sight before me. My wingman was extremely close; I could hear the engines of his aircraft,

right wing down and almost on top of me. I yanked back on the stick, trying to pull the nose of my aircraft away, as he tried to under-run. I thought, "Jesus, we're going to hit!" The impact was incredible. I was thrown violently against the port canopy sill, as his tail ripped through the nose of my aircraft, forward of the canopy. My hands squeezed the stick and throttles as my Hornet gyrated and then steadied. My wingman came out on my starboard side, and I immediately noticed his starboard-vertical stab was damaged severely.

After some brief and excited queries over our tactical frequency to make sure we were OK and still flying, I began to assess the damage. I knew we were done with formation flying, but I opted to stay together, getting no closer than a few thousand feet, so we could work through the problem together. I cautiously flew behind and then to the other side of my wingman to get a better look and relay what I could see of his damaged vertical stabilizer. I asked him to check my aircraft for damage. He saw a hole or gash in the nose, near the pitot tubes and AOA probes. I noticed my AOA indications had disappeared. The ADC and radar also failed. Unsure whom to tell what just had occurred, I radioed strike we had had a midair, and both pilots and aircraft still were flying. I didn't realize at the time this was a good call and probably saved precious minutes.

I decided we should climb and prepare for slow flight-controllability checks. After talking to the tower rep and deciding the aircraft was controllable in the landing configuration with half flaps, I decided to try landing aboard the carrier. My wingman was not so lucky. The damage to his vertical stabs gave him mild controllability issues, and his lowering of the flaps may have aggravated the situation. I hesitated to send him to Al Jaber, Kuwait, thinking that a carrier landing still might be possible. His approach speed would have been too great for an arrested landing and forced the ship's personnel to divert him. By this time, we both had been circling cautiously outside the Case I pattern, burning gas for what seemed like an eternity.

As I dumped extra gas and set up for my straight-in,

# Is Too Close?

I nervously listened to strike vector my wingman. He finally was on his way. My approach and landing was uneventful, with the exception of some trim problems and no AOA indications. The LSO helped me maintain glide slope as I touched down and came to a stop. I taxied clear, shut down, and gathered my senses. My hands stopped shaking two hours later.

Meanwhile, my wingman fought his own battle. Another Hornet had joined and helped guide him to the divert field 100 miles away. I lost track of his situation when I shut down on deck. I heard my wingman had landed safely in Kuwait.

After discussions back at the boat, I realized my wingman simply had lost sight of me for an instant when he looked inside at his instruments. When he again looked outside during the descent, I had disappeared under his leading-edge extension. When he dipped his right wing to see where I was, it looked to me like a collision was imminent.


We've all had close calls in the air, and we sometimes attribute them to being lucky, rather than good. First and foremost, the fact I am writing this and still can buy my wingman a cold one at the club is testament to how fortunate we were that day. Things could have been much worse if the collision had been more direct. Perhaps the most important practical lesson learned is the use of that dreaded call, "blind," over the radio. That word sometimes is looked at as a sign of bad airmanship and an inability to fly tactical formations with competence—usually not the case at all.

Environmental conditions can be tough, and the task saturation of a single-seat FA-18 easily can cause the most experienced aircrew to lose sight. Better to confess and work to regain sight, than to wait and see if our lead reappears. As far as execution of the emergency procedures is concerned, we opted to stay together loosely, even though we briefed immediate separation after a midair. This decision was key to pooling our resources and working through the problem together. We both were controllable and felt we added a comforting reality check to each other until help arrived.

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The call to strike got the attention of key personnel aboard the carrier. They mobilized a support network and vectored help to my wingman as I struggled with my emergency. Keeping a secret was the last thing I should have done.

Brief a solid midair contingency, and don't be afraid to confess if you lose sight of each other. Make the necessary calls when an emergency arises and get the right people involved. 

Lt. Bowen is with CTW-1.







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Lt. Bowen is with CTW-1.



# ORM Corner

## "It'll Probably Never



### ORM Corner

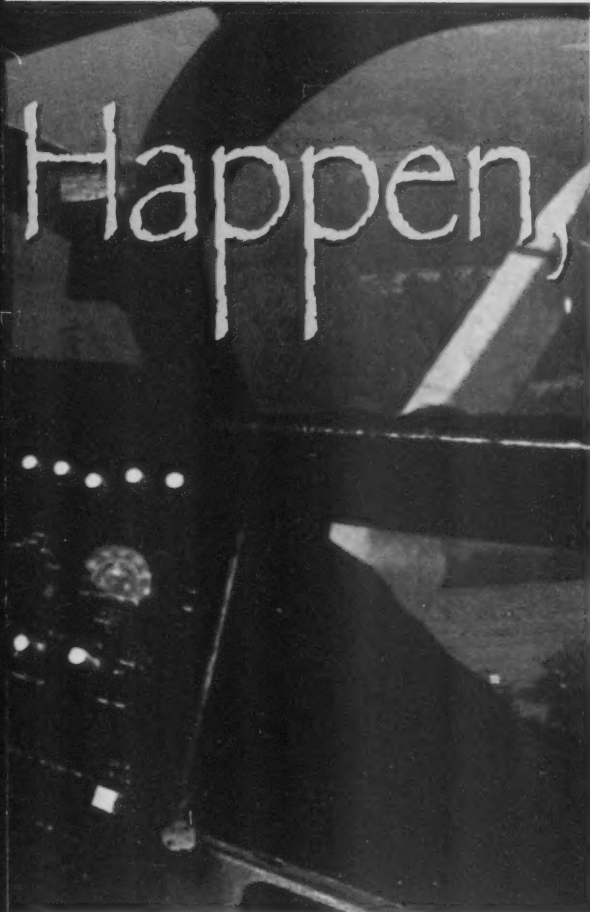
Please send your questions, comments or recommendations to Ted Wirginis or to Capt. Denis M. Faherty, Director Operational Risk Management.

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By Capt. Terrence H. Latorre, USMC

**M**y squadron recently completed a six-month deployment, and our EA-6Bs were getting a well-deserved avionics upgrade. The robust upgrade included GPS, VHF radio, VOR and ILS capabilities, as well as replacing two essential flight indicators. The primary attitude-reference indicator and heading-situation indicator were upgraded to a commercial, off-the-shelf, electronic flight-instrument system (EFIS) that consisted of two, 4-inch-by-4-inch color screens. Incorporating EFIS into the cockpit was a big



# Happen, But..."

change from the analog gauges and required instruction on the many new functions and improvements.

Aircrews were required to complete a transition syllabus for familiarization, proficiency, safety, and standardization. The syllabus included a two-hour lecture, two simulator hops, and two flights. I was one of the first pilots to complete the syllabus and would assist in training of the remaining electronic-countermeasure officers (ECMOs). Our crew of three was scheduled for a day, single-ship, medium-altitude radar

hop to complete the EFIS syllabus for my right-seater (ECMO 1).

The weather forecast was VMC, with normal cumulus build-ups and isolated thunderstorms—typical for spring on the East Coast. We completed a NATOPS brief and focused on crew responsibilities for the radar route. It turned out to be a beautiful day to fly, and things were just warm and fuzzy.

We manned-up, launched, and headed out with a full bag of gas—19,400 pounds. We leveled off at 11,000 feet, and I demonstrated some of the different functions and modes of the new boxes. We had been airborne for an hour and were over South Carolina, 250 miles from Cherry Point. My frontseater and I, having fiddled enough with the boxes, called the hop a success and were ready to sit back and enjoy the rest of the flight. The air-traffic controller was talking on the radio to a commercial airliner heading into Greenville, S.C., when suddenly the words stopped in mid-sentence. I heard a loud click and immediately noticed the EFIS displays go blank. The plane had lost electrical power, so I pulled the ram-air turbine (RAT) handle and scanned the cockpit to see if anything else was wrong. For a minute, my senses soaked in every little bump, vibration, or noise while I waited for

any other problems. Nothing else popped up; the controls, hydraulics and engines were OK, and the jet seemed flyable. The two of us in the front exchanged blank stares and began tackling the emergency.

I had no response on my ICS or radios, so I removed my mask to communicate with my rightseater. I yelled to ECMO 1 what was now obvious to us all, "I think we have a partial electrical failure—engines good, hydraulics and controls seem OK. I'm gonna head back to Cherry Point, VFR." ECMO 1 nodded in agreement as I selected emergency on our IFF and scrambled for a chart. Both generators seemed to be on line, but a quick scan of the instrument panel showed we were missing both EFIS displays, the radar, all five radios, ICS, TACAN, VOR, GPS, and the INS.

I couldn't help but think back to my first NATOPS check when the instructor said, "It'll probably never happen, but..."

Without any electronic-navigation equipment, we used our chart and wet-compass to dead reckon the 250 miles from our present position to Cherry Point. We had passed a turn point on our route, so I was able to take a reasonable cut toward the coast. I thought this heading would get us south of Cherry Point, and then we would turn north and follow the coast to home field. Since the plane was flying OK, we could evaluate the situation and develop a plan.

As ECMO 1 broke out the pocket checklist (PCL), I tried to yell to our backseater what our situation was. The backseat is completely blocked off from the front cockpit, except for a small opening behind the pilot's right shoulder. I held up a kneeboard card on which I had scribbled our current situation and intentions. I looked back through the tiny hole and saw he understood the note. At least we could keep him informed of our plan. ECMO 1 pointed to the PCL and showed we probably had popped the No. 1 DC circuit breaker; it cannot be reset in flight, so we could do nothing to improve the situation. We continued reading the emergency

procedure and discovered we could not use the flaps and slats or extend the landing gear by normal means. Singly, these configuration problems aren't too hard to handle; together, they would prove to be a troublesome combination, especially when we had to yell to each other to communicate.

The situation was deteriorating quickly and definitely was getting difficult. We still were more than 200 miles from Cherry Point, flying a lost-communications profile and using the wet compass and a chart to guide our journey. My throat was beginning to hurt from yelling as we discussed our game plan for getting the aircraft configured for landing. NATOPS procedures for blowing down the landing gear required us to be below 8,000 feet and slower than 150 knots. However, to blow down the gear without any available flaps or slats would cause the aircraft to decelerate below stall speed and could cause it to depart controlled flight. The situation in which we found ourselves is well-known in the Prowler community and is presented often during emergency-procedure simulators. The aircraft must be pulled into a zoom climb and placed in a zero-gravity state to prevent it from departing controlled flight while you blow down the gear. As the airspeed decreases toward stall speed, forward stick is applied to place the aircraft in a zero-G state before reaching the 150-knot limit. Technically, the aircraft isn't flying during this ballistic profile, which means it cannot stall even though the instruments indicate less than stall speed. I have practiced this maneuver dozens of times in the simulator but was a little anxious to see how the plane would react. Our game plan was to remain clean until within visual range of the field to conserve gas (there is never enough when you need it) and then do the zoom maneuver just off the coast from Cherry Point.

We decided to perform the zoom maneuver over the water, in case we had to eject. Following the emergency extension of the landing gear, I would fly a lost-comm recovery into the tower



pattern and do a no-flap, no-slat approach to a rolling, short-field, arrested landing. It took 20 minutes to reach the coast, and my dead-reckoning navigation put us exactly where we wanted to be—20 miles south of Cherry Point and over the Intracoastal Waterway.

I descended to 4,000 feet and set up for the gear extension. I planned to pull the nose up to 35 degrees above the horizon and wait for the airspeed to bleed off. I then would push the nose forward, place the aircraft in zero-gravity state, and blow down the gear within the NATOPS parameters. As the aircraft decelerated, the controls became extremely shaky, and the aircraft buffeted moderately. The aircraft continued to climb and 8,000 feet came quickly. I pulled up the nose more and waited as the airspeed finally bled off. The plane was shaking moderately as I manipulated the sluggish stick back-and-forth between my legs trying to maintain wings level.

As the airspeed decelerated through 170 knots, I gently pushed forward, and we floated in our seats. My left hand was on the emergency-blow handle, and I pulled it when I saw 150 knots on the airspeed indicator. The gear doors immediately opened, and I thought there were three good clunks. I did not have any internal-gear indicators because of the power loss, so I made a mental note to do a flyby to get confirmation from the tower. I was very surprised at how violent the maneuver was—no simulator ever could have prepared me for that. Fortunately, no one pulled an ejection handle, and the nose fell toward the earth. My heart was racing, and I was soaked with sweat. This wasn't the hard part, either. We set up for a VFR entry into the tower pattern, and ECMO 1 broadcast our intentions in the blind on his handheld-survival radio. As we passed over the field, I saw the airborne-rescue helo shadowing our path around the pattern. I had ECMO 1 relay we would conduct a low approach on the first pass to allow visual verification from tower that our landing gear was down.

I flew the low pass at 200 knots and at 200 feet and received a green ALDIS light from tower, confirming our landing gear was down and locked. The last event to accomplish was the no-flap, no-slat approach into the arresting gear. Tower gave us a second, green-ALDIS-lamp signal, confirming our clearance to land. The crash crew was in position. A no-flap, no-slat approach is extremely fast, generally 165 to 175 knots. It is so fast it can sometimes exceed maximum tire speed on touchdown. We had calculated our approach speed and figured we had five knots to spare. We rolled onto final with 200 knots at two miles. I flew a modified, self-contained GCA until I acquired the ball. I planned to bleed as much airspeed as I could before

The situation was deteriorating quickly and definitely was getting difficult.

the wheels touched down, so I flew a low-flat approach.

The aircraft hit ground effect just short of the runway and began to decelerate as I flared the landing. We touched down 800 feet down the runway at 160 knots—15 knots slower than the tire limit. With runway passing by quickly, we entered the arresting gear at 150 knots. Pulling the stick back into my lap, I raised the nose of


the jet to make sure the hook would not miss the wire. As soon as I felt a tug, I was on the brakes, and the jet rolled to a stop.

As I shut down the engines in the arresting gear, I realized the evolution had taken almost an hour to complete. Numerous tasks and challenges were completed in that very long hour.

We learned several lessons that day, some new and some old. First, never say never. A Prowler has five different on-board radios (eight if you include individual PRC-90s), and the aircrew always assumes communications will be available. Think again! Don't overlook your PRC-90 survival radio. During the debrief, we learned tower had heard all of our transmissions, which assisted in the smooth recovery. The PRC-90 has an earpiece, although you must remove your helmet to insert it. My rightseater didn't have one, and, consequently, he didn't hear any of the tower transmissions. Second, communication is critical. My voice was shot upon landing, and it probably wouldn't have lasted had the flight taken another hour. We all remember sitting through our annual crew-coordination lectures and learning the two types of communication: verbal and non-verbal. Without the ICS, talking in the front seat to be heard above the wind blast and engine noise was extremely difficult. We had to depend on non-verbal communication more than normal. The Prowlers side-by-side cockpit arrangement, compared to a tandem cockpit, is excellent for non-verbal communication between aircrew, but I discovered that keeping the lone ECMO in the back-seat aware of our situation was quite difficult.

This emergency forced me to be creative, to give specific instructions, and to prioritize information. Finally, the simulator is a great environment to develop habits and reinforce procedures. Everything that occurred during this flight, except for the communications problem and the actual flight characteristics during the zoom maneuver, was exactly as it was in the simulator. The simulator helped me analyze and identify the problem. I then was able to develop a game plan for success. It is good to know all the time in the sweatbox paid off for us. From

day one in flight school, aviators are taught to fly the jet first.

A common perception is that a Prowler has lots of gas and radios. Who would ever think a Prowler could lose five radios? Your ability to handle the unlikely is always being tested. Train for the worst, expect the best, and take what's given in the middle. 

Capt. Latorre currently flies with VMAQ-1.

## Mishap-Free Milestones

VP-5	24 years	(146,070 hours)
VP-45	33 years	(211,000 hours)
VP-30	38 years	(377,000 hours)
VMFA(AW)-332	24 years	(90,000 hours)
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VF-154	3 years	(4,500 hours)
HS-10	9 years	(46,500 hours)
HC-3	28 years	(176,000 hours)
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VX-20	10 years	(38,015 hours)
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# Did We Really Lose an Engine?

By Lt. Will Christian

The mission was easy: depart Naples, fly out to the boat, pick up the admiral, and fly him and his staff to NAS Sigonella. The weather was nice, and the wind was light. It was a beautiful day to fly.

After preflight, we strapped in and started the checklist. As we taxied our H-3, we noted the wind was out of the west at 6 knots. Great, we'd have a slight head wind coming back with the code on board. No worries, at least it was only 6 knots.

After we were airborne, I dialed in the ship's TACAN. Right away, it locked on, and, sure enough, the ship was where it said it was going to be—45 miles due east of NAS Sigonella. I gave the controls to the copilot and dialed in the frequencies for the ship and Red Crown.


After feet wet, we climbed to 1,000 feet and flew max cruise. Approximately 25 miles out, just over halfway there, I felt a sudden left yaw. I scanned the gauges and saw the No. 1 torque was at 0, and the Ng and T5 reflected the ground-idle setting. Instinctively, I reached for the speed selectors. At the same time, I heard the crew chief yell for full power. I pushed the speed selectors full forward but noticed the No. 1 engine didn't respond to this movement, indicating an Ng-signal loss to the fuel-control unit.

When we completed the immediate-action steps, I broke out the checklist. The copilot turned toward NAS Sigonella and told the ship of our situation. Meanwhile, I declared an emergency to ATC, something I never thought I would do. I then got radar vectors to NAS Sigonella.

The flight back felt like time stood still. I glanced back to see what the crew was doing and observed our second crewman backing up

our checklist items with the NATOPS. Our crew chief stood between us, meticulously scanning the gauges to make sure we didn't miss anything and nothing else was wrong with the aircraft.

We elected to do a run-on landing. The landing checklist was completed when we were feet dry. We breathed a sigh of relief when the runway was in sight. It wasn't until after we landed that I realized things could have been a lot worse. We could have experienced a high-speed shaft failure that could have created compound emergencies. Crew-resource management was excellent, and staying calm made the flight back much easier than it actually was.

We landed without further incident. Losing an engine, especially over water and halfway to your destination, was no laughing matter. Experiencing hundreds of simulated emergencies never really prepares you 100 percent for a real emergency. It's like driving a car and blowing a tire; you never plan on it—it just happens. Anticipation and foresight will give you an advantage when an emergency occurs. What you do during the emergency is what counts. Execute your NATOPS procedures, remain calm, delegate responsibilities, and involve your crew to increase your chances of survival. 

Lt. Christian flies with HC-2 Det 1

*We cannot overemphasize Lt. Christian's comments about executing NATOPS procedures. The Naval Safety Center's database has many examples of circumstances where an emergency occurred and the aircrew did not execute NATOPS procedures or did not do them completely. The end result: what should have been a hazrep became a Class A mishap.—Ed.*


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# Isn't This Supposed a Four-Stage Turf

By Lt. Aaron Kleinman

After a long delay, we finally were underway aboard USS *John F. Kennedy*. Before we could “head east,” we had to complete phase II of JTFEX. We already had completed one week of the exercise from the beach while the ship underwent repairs and sea trials. We were more than a little anxious to get on with the deployment and relieve our shipmates, who were awaiting our arrival in the Indian Ocean.

We launched for a standard-day, double-cycle to control a strike into the Dare range and to enforce a make-believe, no-fly zone in the warning area. I was the CAPC in the left seat, and my nugget copilot was in the right seat. I had made one full cruise and two sets of work-ups, and the copilot had made only the recent work-ups. We climbed to station profile at 24,000 feet and let George, the autopilot, do the flying, while we listened to the back-end check in the strike package and pass them off to the range controller.

All was going well, and the strikers were off-target, passing their reports, when we heard and felt a loud thump as the aircraft swerved



left. I immediately disconnected the autopilot and scanned the engine instruments. The CICO asked over the ICS, “What was that?”

I selected the entire crew on ICS and replied, “I don’t know,” as we turned the airplane toward mother.

Hmmm...RPM, TMT, IHP, fuel flow, oil pressures and temperatures were within limits. The starboard engine required much more fuel and higher temperatures than the port engine to get the same horsepower.

# ed to Be ine?

Photo by PHAN Ferguson



As we continued inbound to the ship, the CICO ignored Bravo Papa's plaintive cries for a MISREP and broke out the PCL. Although the engine was stable, we selected the "RPM/IHP/TMT/Fuel Flow Fluctuations" checklist as the most applicable. These checklist procedures deactivate all electrical signals to the propeller and electronic-fuel control. The engine showed no effect, and the CICO and copilot coordinated our recovery one cycle early. The boss agreed to take us first, so we busted home. Descend-


ing through 8,500 feet, we noticed a 2,000-horsepower split between the port and starboard engines—the T56-A-427 engines are rated at 5,100 shp each. Despite this difference, the starboard engine still was governing and producing positive thrust, so we decided to leave it online.

We adjusted our fuel state. The boss cleared us for a five-mile straight-in, and we set up at 2,000 feet. I elected to leave the starboard engine set at 1,000 horsepower and fly with the left power lever. I briefed my copilot to back up rate of descent, lineup, and to tell me when we had cleared the ramp.

We commenced the approach. Glide slope was under control, but the asymmetrical thrust on lineup gave me fits. By the time we called the ball, I had things squared away, thanks to my copilot's sugar calls. In close, I had to reduce power on the starboard to stay on glideslope. Crossing the ramp, the copilot said, "You've got it made." I closed out the power levers and settled onto the ace. Welcome aboard!

Taxiing clear of the LA, we noticed that the TMT on the right was out of limits for ground operation. We shut down and headed to the PR shop.

The paddles were waiting for me when I arrived at maintenance control. That's when I discovered not only had we failed to secure our taxi light (oops), but we had told everyone on the ship, except the LSOs, about our emergency. They had no idea what was wrong with us, or that we had an emergency. When they learned of our problems, they graciously no-counted my deserved no-grade.

The loud thump we had heard and felt was the first stage of our risk-mitigated turbine eating itself. Borescope pictures showed not one blade was left on that stage, and several stator vanes had large chunks missing. Amazingly, the rest of the engine held together. Good aircrew coordination got us aboard that day. 

Lt. Kleinman flies with VAW-121.



# How Battle-

As I climbed out of the jet, our gunner looked at me in amazement and pointed at station three.

By Lt. Joe Alden

**W**ith two nights of flying left in CVW-8's time in support of Operation Enduring Freedom, our flight of two Hornets was tasked with attacking targets in Afghanistan. The air wing primarily had been flying night missions, ours would be the same. We were scheduled for the second event, which would launch just past midnight and land at sunrise.

Each jet carried two AGM-65E, laser-guided Maverick missiles. All four of our weapons and stores-management systems indicated go, on deck and airborne. After a quick top-off from the KC-135, we headed north for our "hunting" expedition. The targets were parked neatly along a mountain road and where they were supposed to be. They were trying to hide from us. We made quick work of target acquisition and dropped ord-

nance on the first run. The feel of the LMAV coming off of the jet was something I hadn't heard or seen since our missions into Kosovo in 1999. With a resounding "woosh," my missile headed downrange. I waited for the explosion that never would come.

I thought the missile had gone dumb and overshoot the target, so we continued the mission. We came around for the second pass; both our weapons successfully hit the targets. We left to the south and headed toward Iron Maiden for a final top-off before the return trip to USS *Enterprise*.

The sun peeked over the horizon as we got ready to push out of marshal on the Case III approach. After landing, the yellowshirts parked me on the bow's starboard side. As I climbed out of the jet, our gunner looked at me in amazement and pointed at station three. I couldn't

Photo by PH3 Clifford L.H. Davis



# About That Damage Check!

believe what I saw; a LMAV still hung from the launcher!


I thought I was looking at the wrong jet. I had heard, seen, and felt the missile fire several hours earlier! We cautiously approached the missile and saw the back half of the launcher was roasted to a crisp. It looked exactly like a sparkler; it was burnt out, gray and charred. The rocket motor had fired and created quite a flash airborne so I thought it had left the jet.

EOD was called and they removed the weapon.

I had to come up with a good story on how I didn't notice the weapon still hanging on the jet. I had plenty of good excuses. It was on station three, which isn't visible from the cockpit, and

the LMAV is too short to be seen from under the leading-edge extension.

To make a short story even shorter, we neglected to do a proper battle-damage check. My stores page showed both missiles had left the rails. The AAA was light in the area and no shoulder-launched SAM activity had been seen, so I didn't think a check was needed.

We train like we fight, which includes doing a battle-damage check at the end of any flight. This night we didn't do one. The only negative that came out of this mission was that it provided some humor for the air wing at the next fop'sle follies, but it easily could have been much worse. 

Lt. Alden flies with VFA-87.



Photo by PH3 H. Dwain Willis

# You Can't Support Naval If the Air Won't Support

By Lt. Jason Dutcher

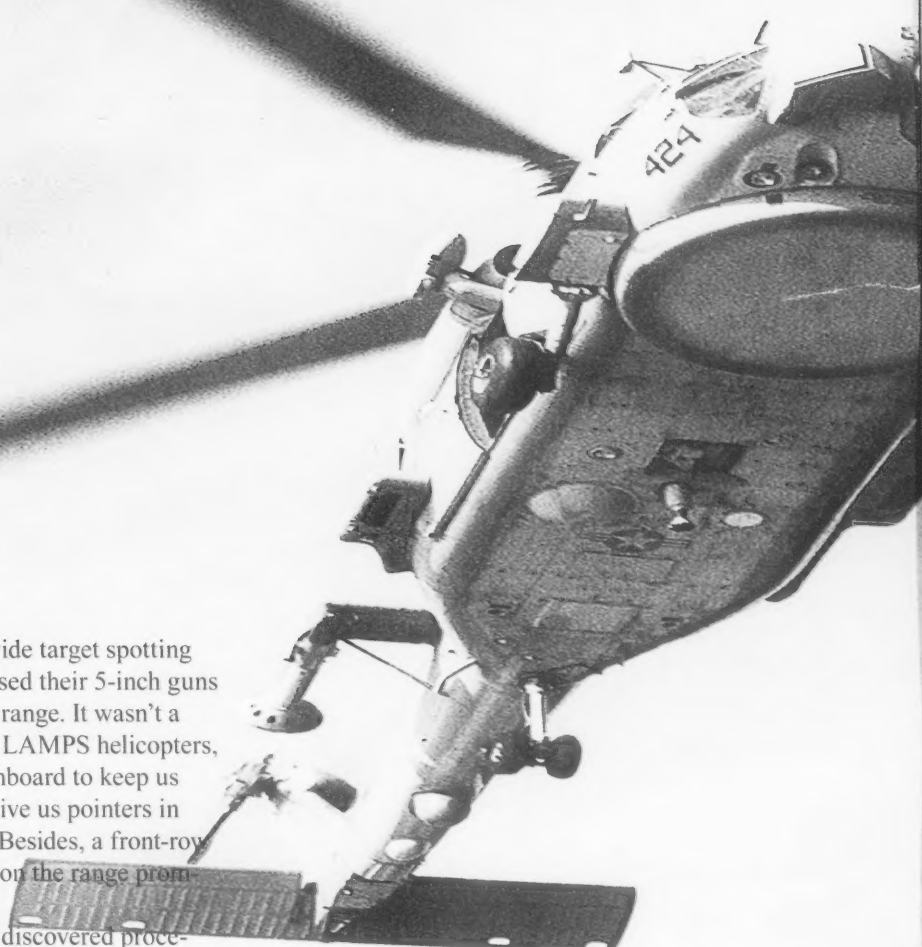
We were tasked to provide target spotting while our ship exercised their 5-inch guns on a rugged Scottish range. It wasn't a common mission for LAMPS helicopters, but we had a naval-gunfire expert onboard to keep us from looking like amateurs and to give us pointers in calling shot placement for our ship. Besides, a front-row seat to blast whatever we wanted to on the range promised to make for an interesting day.

We briefed the night before and discovered procedures for naval-gunfire support. Our artillery expert usually worked with the Army and Marines and was not very familiar with the SH-60B. The brief brought him up to speed. We modified our crew tactics to incorporate our radar and data link, so the ship and helicopter would target from coordinated GPS plots.

The key to successful gunfire adjustments from a helicopter is to avoid racetrack patterns where it's easy to lose sight of the range. Instead, we planned to hover

300 feet over water, off the tip of a rocky cliff, with the impact range 3,000 meters to our right. We could keep our eyes on the range and maintain a fixed reference point for fire adjustments.

The drawback to this technique is it required a high-altitude hover. There are two risks with this maneuver. From our performance charts, we knew we would have enough altitude to recover from a single-engine failure,



# Gunfire Port You

Photo by Sikorsky Aircraft



and this alleviated our major concern. However, there is the possibility of getting into vortex-ring state, sometimes called "power settling." This occurs when you try to add power while in a near-vertical descent from a hover. A descent through your rotor wash creates swirling vortices that spoil lift, so the more power you add, the worse it gets, and the faster you fall.

It seemed unlikely we would encounter this problem since power settling is rare. We were familiar with the corrective procedures, but we didn't brief them in detail. We assumed this phenomenon would not happen. Can you see where this is going?

The event began with me at the controls in the right seat, where I had the best view of the range. We got our bearings, and I held a stable, high hover, as we called out targeting adjustments. While I monitored the hits, I drifted slightly out of position and inadvertently climbed a few hundred feet. I was fixated on getting a better view to make accurate adjustment calls. As the ship's gunnery team zeroed in on our imaginary tanks, we decided to swap controls, so I could concentrate on watching the shots. The HAC took control in the left seat and had started correcting back into position from

600 feet when the aircraft suddenly began to shake and pitch up and down.

I looked at the HAC to see if he was trying a new flying maneuver. The serious look on his face told me he was not having fun. I initially thought the wind swirling around the cliffs had caused the turbulence, but, whatever the reason, we rapidly were descending through 400 feet and losing pitch control.

Recovery from power settling involves dropping the collective and gaining forward airspeed, so I immediately checked out the escape route in front of us. Instead of flat ocean, the edge of the cliff jutted out in front of us, 200 to 300 feet off the water. There was minimal room to gain speed as we descended. As outlined in NATOPS, the collective was lowered, but this action increased our descent rate. The vibrations started to lessen as we broke clear of the rotor wash. We fell faster but still needed time to gain airspeed, add power, and recover from the descent.

I suggested the HAC lower the nose to build airspeed, which would help drive us into smoother air. The cliff edge was getting closer and closer. If the airspeed didn't build up soon, we wouldn't be able to scoop out our descent. Ocean or cliff edge? Take your pick—they were competing to smack us first.

We had a combination of lowered collective, lowered nose, and an aircraft falling—not flying—toward the ocean and cliff. The HAC and I willed the aircraft to start flying again, and we held our breath. After a few seconds—which seemed like hours—the aircraft started a shallow climb. Airspeed built just enough so the HAC gingerly could bank the aircraft, dodge the cliff, and hold what little altitude we had. We thought the biggest danger that day was staying clear of the firing line! We only had a few feet to go before becoming part of that beautiful Scottish countryside and making a bigger explosion than a combination of all the 5-inch rounds fired.

It's not enough to execute EPs quickly and accurately. The best game plan is to assess and avoid risks associated with your intended flight regimes—even those you don't intend or expect. We didn't think power settling would be a problem for us, but we walked right into it. We were fortunate to execute a successful recovery, but had we discussed power settling in detail before the flight, we might have avoided it entirely.

Lt. Dutcher flies with HSL-48.

# You Can't Support Naval If the Air Won't Support

By Lt. Jason Dutcher

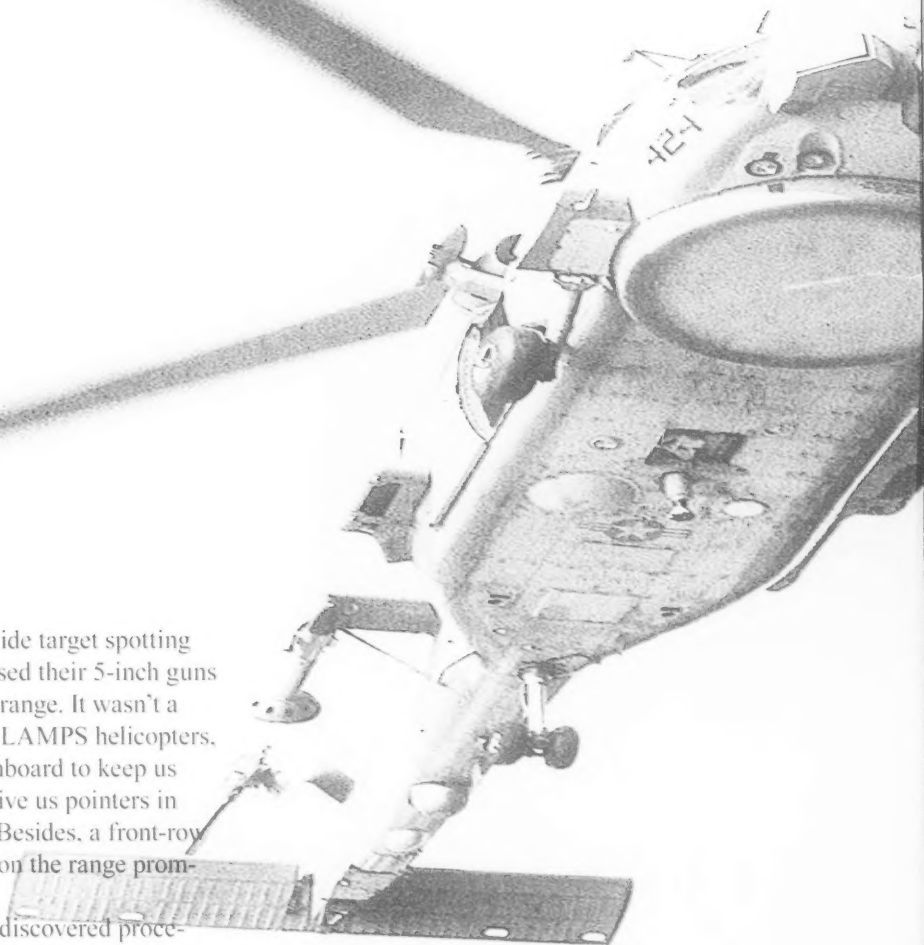
We were tasked to provide target spotting while our ship exercised their 5-inch guns on a rugged Scottish range. It wasn't a common mission for LAMPS helicopters, but we had a naval-gunfire expert onboard to keep us from looking like amateurs and to give us pointers in calling shot placement for our ship. Besides, a front-row seat to blast whatever we wanted to on the range promised to make for an interesting day.

We briefed the night before and discovered procedures for naval-gunfire support. Our artillery expert usually worked with the Army and Marines and was not very familiar with the SH-60B. The brief brought him up to speed. We modified our crew tactics to incorporate our radar and data link, so the ship and helicopter would target from coordinated GPS plots.

The key to successful gunfire adjustments from a helicopter is to avoid racetrack patterns where it's easy to lose sight of the range. Instead, we planned to hover

300 feet over water, off the tip of a rocky cliff, with the impact range 3,000 meters to our right. We could keep our eyes on the range and maintain a fixed reference point for fire adjustments.

The drawback to this technique is it required a high-altitude hover. There are two risks with this maneuver. From our performance charts, we knew we would have enough altitude to recover from a single-engine failure,





# Gunfire Port You

Photo by Sikorsky Aircraft



and this alleviated our major concern. However, there is the possibility of getting into vortex-ring state, sometimes called "power settling." This occurs when you try to add power while in a near-vertical descent from a hover. A descent through your rotor wash creates swirling vortices that spoil lift, so the more power you add, the worse it gets, and the faster you fall.

It seemed unlikely we would encounter this problem since power settling is rare. We were familiar with the corrective procedures, but we didn't brief them in detail. We assumed this phenomenon would not happen. Can you see where this is going?

The event began with me at the controls in the right seat, where I had the best view of the range. We got our bearings, and I held a stable, high hover, as we called out targeting adjustments. While I monitored the hits, I drifted slightly out of position and inadvertently climbed a few hundred feet. I was fixated on getting a better view to make accurate adjustment calls. As the ship's gunnery team zeroed in on our imaginary tanks, we decided to swap controls, so I could concentrate on watching the shots. The HAC took control in the left seat and had started correcting back into position from

600 feet when the aircraft suddenly began to shake and pitch up and down.

I looked at the HAC to see if he was trying a new flying maneuver. The serious look on his face told me he was not having fun. I initially thought the wind swirling around the cliffs had caused the turbulence, but, whatever the reason, we rapidly were descending through 400 feet and losing pitch control.

Recovery from power settling involves dropping the collective and gaining forward airspeed, so I immediately checked out the escape route in front of us. Instead of flat ocean, the edge of the cliff jutted out in front of us, 200 to 300 feet off the water. There was minimal room to gain speed as we descended. As outlined in NATOPS, the collective was lowered, but this action increased our descent rate. The vibrations started to lessen as we broke clear of the rotor wash. We fell faster but still needed time to gain airspeed, add power, and recover from the descent.

I suggested the HAC lower the nose to build airspeed, which would help drive us into smoother air. The cliff edge was getting closer and closer. If the airspeed didn't build up soon, we wouldn't be able to scoop out our descent. Ocean or cliff edge? Take your pick—they were competing to smack us first.

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Lt. Dutcher flies with HSL-48.

# Never Again

By Ltjg. Case Vernon

**W**e were a few weeks into our cruise, and I was enjoying life as a nugget pilot with VFA-147. Carrier Air Wing Nine and the USS *John C. Stennis* battle group were crossing the Pacific to relieve a carrier in the Arabian Sea, in support of Operation Enduring Freedom. We deployed two months ahead of schedule, and everyone was excited about the upcoming combat operations.

I was scheduled for a night sortie to remain night-current onboard the boat. I was relaxed about the flight—not too much preparation or study for this hop. “Just go out and bag a night trap,” I told myself.

I went through my normal rituals: Suit up, grab the weight chit, and go up to flight deck control to see where my jet was parked. Aircraft 406 was parked in the six-

pack, which I thought was great because the floodlights from the island would shine down to help me preflight and strap in. I did the standard walk-around and everything looked good. About this time, I could hear the distinct sound of other Hornets starting. I looked at my watch and realized I had only 20 minutes until launch time. I cursed myself for being late.

The plane captain used the electrical canopy-actuate switch inside the ground-power-receptacle door to open the canopy—standard procedure. I climbed the ladder and started my ejection seat and cockpit preflight, then strapped in and started the normal startup checklist. It was warm outside—about 80 degrees Fahrenheit, so I decided to leave the canopy up for start until the ECS cooled down and had good flow. Once I had both engines online, I became distracted with some FCS Xs and BLIN

codes. I had a troubleshooter hook up, and I read the problems over the ICS. By this time, other aircraft were taxiing to the waist catapults in front of me, and I was nervous about making the launch.

We finally sorted out the FCS gripes, and the IBIT passed. In this confusion, I still had not lowered my canopy. As the PC gave me the "four down" signal, I remembered to lower the canopy. I held the switch in the down position, but to my surprise, nothing happened. The canopy didn't move an inch. I cycled the switch up and down—still nothing.

I signaled for the troubleshooter again, and he hooked up for the second time.

"What's up sir?" he asked.

I explained the canopy would not move when I held down the switch. He checked the circuit breaker and told me it was OK. Next, I shut down the port engine so he could climb up and take a look for himself. By this time, the first aircraft was in tension on cat 4, and I was thinking to myself, "I'm going to miss this launch because my stinking canopy won't close."

After the troubleshooter tinkered with the switch, he yelled to me over the noise that he manually would crank down the canopy a little ways, and then I could take over with the handle stowed in the cockpit. I thought this was fine; let's just hurry up already.

He started cranking, and the canopy started to move down. In the cockpit, I wrestled with the handle and finally dislodged it from its clamp. I took over cranking from the shooter and the canopy slowly came down to the rail. It started moving forward, as it should. I cranked until the canopy caution light went out on the left DDI and then cranked it a few more times until it stopped. I figured that was good enough—the light was out, and the handle wouldn't crank any farther. I stowed the handle and gave a thumbs up to the yellowshirt, who was waiting impatiently in front of my jet.

I was quickly broken down and taxied to cat 4 for launch. I went through my checklist bottom to top and went to military upon the "take tension" signal. I gave a good wipeout of the controls and double-checked my flaps-half, trim and radar altimeter set. I turned on my external lights and grabbed the towel rack with my right hand. Ahead of me was your standard, scary night sky, with no horizon whatever.

At the end of the stroke, I felt a thump, and a little wind rushed into the cockpit. It was followed closely

by the infamous "deedle-deedle." All I was concerned with was rotating and flying away from the water. I already had selected max power down the stroke, so I set 10-degrees-pitch attitude and looked for a positive VSI. I raised the gear and flaps, and after passing 1,000 feet, I punched out the master-caution light and looked down to see canopy, voice/aur, and CNI cautions.

I hesitantly looked to see if the canopy was still there. It was, but it had slid back about four inches—as if you had closed it normally until it hit the canopy rails and then stopped. At that moment, I heard a loud beeping tone in my headset—like an ELT beacon sounding. I pulled out the comm 1 knob to deselect guard, but nothing came up in the UFC scratchpad. I tried comm 2—nothing. It was as if the radios had frozen. The situation had gone from bad to worse, and I was frustrated.

I decided the worst problem was the open canopy, so I lowered my seat all the way, and slowed to 200 knots. I decided to put down half-flaps too, and slow to 150 knots. I climbed to 8,000 feet, set the autopilot, and retrieved the PCL from my helmet bag. I had departure control on comm 1, so I tried calling them a few times. Between the wind noise and the ELT going off, I couldn't hear a reply. I had plenty of fuel—13,500 pounds to work with, which was at least an hour's worth at that altitude and power setting.

I circled 15 miles from mother, and read about the other two cautions. Interestingly enough—both cautions said the same thing: 1. Check BIT page. If CSC

## Then it dawned on me, "What if I crank in the wrong direction?"

MUX failure—2. Refer to CSC MUX failure. So I pulled up the BIT page on the right DDI and, sure enough, CSC MUX fail was staring me in the face. I found the page in the PCL and learned there aren't any steps to take—you're stuck with what you've got. My radar altimeter, voice alerts, radio control, TACAN, and some other systems were history. The PCL did say, however, I could use the UFC backup to select radio channels.



Simultaneously, I made a radio call every other minute or so—declaring an emergency and stating my position on departure frequency. I switched on the manual-guard-select switch on the left console and tried to broadcast. After a few tries, with the ELT still going off, I faintly heard “Ghost,” one of our E-2Cs, roger up one of my calls for help. They surely would relay my troubles to the ship and send someone to join on me. I hadn’t tried the UFC backup on the radios yet.

This whole process had taken about 15 minutes, but it felt like an hour. I burned circles in the night sky and waited for someone to join. Next, I decided to try closing the canopy with the crank handle. I wrestled the darn thing out again and carefully connected it to the knob.

## I found the page in the PCL and learned there aren’t any steps to take—you’re stuck with what you’ve got.

Then it dawned on me, “What if I crank in the wrong direction?” I couldn’t remember—clockwise or counter-clockwise? If I guessed wrong, the thing might blow off completely, and then I’d really have a problem. I put my eyes right up to the canopy rail and started cranking at a snail’s pace. The canopy inched forward. A strange voice in my head said, “You chose wisely.” I managed to get the canopy an inch or so forward, but that’s all. “Better than nothing,” I thought to myself.

About that time, I saw some red strobe lights down my left-wing line. Thank God, one of my Hornet buddies had arrived to take me back to the ship. Then the ELT beacon stopped. That was good news. Now I could communicate easily with Rhino, a Marine aviator from VMFA-314. I passed him the lead, and he told me he’d take me down for the CV-1 approach. That sounded good to me; I just wanted to trap and get out of this thing. We descended and set up for a straight-in approach. With no TACAN and no ACLS, I was glad to be flying parade. I had switched up the manual

ILS on the left console as well, but I never got needles. Oh well, at least we weren’t IMC. I dumped to landing weight and tried to psyche myself up for the approach and landing. Rhino kissed me off and told me he’d be at my 10 o’clock if I bolted or waved off.

The ball was right in the center when I called it, and I flew it down. I started to go high and tried to chip away at it. “Not enough,” I thought, so I eased off more power. Just then, it seemed to take the express elevator down. I came on with MIL as paddles called for power. I knew I had overcorrected when paddles followed with, “Easy with it.” The ball went back up the lens—right to the top as I was over the steel.

As I touched down, I hoped the canopy would stay put. I didn’t feel the hook engage.

“Bolter, bolter,” paddles said. I knew it already. The canopy seemed fine as I climbed away, and I raised the gear and went to half flaps. I saw Rhino right where

he said he’d be, and I joined quickly. “No problem,” he said, “just take it easy.” He led me around, and we set up again. This time, he dropped me off at a mile, so I could start flying the ball a little earlier. This pass was much better. A little high all the way to an OK 3-wire. I breathed a big sigh of relief as I taxied clear of the landing area. Boy, was I glad to hear my engines spool down!

Later, I went through the story with most of the guys in the ready room, and one said, “Didn’t you read that message about a guy who manually cranked down his canopy and ended up losing it? He couldn’t fly a safe approach because of the wind blast and having to hunker down in the cockpit. He ended up doing an ACLS mode one.”

“No,” I said glumly. I had never read that message. I was fortunate. I wouldn’t have been able to do a mode one with the CSC failure. The adage held true: If it doesn’t feel right, it probably isn’t. As I went to bed that night, all I could think to myself was, “Never again.”

*Ltjg. Vernon flies with VMFA-314.*



# I Can Hack It

By LCdr. Greg Coupe

Ever had a cold and felt pressured to fly, saying to yourself, "I can hack it"? I was a first-tour ECMO, flying in the last phase of workups, when I awoke feeling run-down. I had the typical cold symptoms: stuffy nose, headache, tiredness and chills. I took myself off the flight schedule, ignored the Ops O's snide comments, self-medicated and went back to the rack.

I felt much better the following day; the cold symptoms were gone, except for a runny nose. I easily could clear my ears, and I told the Ops O to put me on the schedule.

We briefed at 0300 the following day, which was the first day of the JTFEX war. The skipper asked if I really was OK to fly, and I told him I was fine and not to worry. We launched at 0500. I sneezed and blew my nose a few times during the climbout and mission. As we made the initial descent, out of marshal on a Case III approach, I felt pressure in my ears and cleared them with a valsalva. Farther along the descent, the pressure came roaring back. A valsalva again cleared my ears, but the pressure in my forehead continued to intensify. Around 5,000 feet, the pain became unbearable—toe curling, sharp and more intense—like a needle was being jabbed between my eyes.

The ECMO next to me asked if I was OK; I barely was able to answer. The pilot leveled off, and, after a few moments, the pressure subsided enough to where I could continue. I told him I was well enough to press on with the approach. About 2,000 feet later, the blinding pain was

back, but I didn't say anything. I merely wanted to land and end the torture session.

The sinus pain suddenly disappeared on touchdown, much to my relief. In exchange, I now had a wicked headache. In the ready room, I told my story during the debrief, not fully aware of the chastising I was about to receive—my CO was not pleased. He ordered me to see the flight surgeon. I left the ready room slouched over and feeling defeated.

The thorough exam included sinus X-rays, which revealed I had torn my frontal sinus. That explained why the pressure had subsided, but I had been left with the headache. I was grounded for 30 days, placed in the "healing chair" (nighttime SDO), forbidden to fly home on the C-9 or commercial aircraft, and advised not to drive or to take a bus over the Rockies.

The carrier pulled into Mayport two weeks later. My very pregnant wife was in Whidbey Island, and Christmas was in five days. How was I going to get home? Hours later, I was in a taxi heading to the AMTRAK station for a cross-country journey, in coach class and not a sleeper car. The next three days gave me plenty of time to determine if it was worth trying to hack it.

LCdr. Coupe flies with VAQ-134.

*A classic case of "I told you so!" —Cdr. Nicholas Webster, MD, MPH, aeromedical analyst, Naval Safety Center.*

About 2,000 feet later, the blinding pain was back, but I didn't say anything.

# Overstaged and Und

By Lt. Billy Murphy

**I**t was a dream day in the Gulf of Aden for a 46 driver. Not only did I hold the dubious distinction as the current flight-hour "low man" for the month, but I was scheduled for the biggest vertrep yet of our six-month deployment—over 400 pallets.

Our boat, USNS *Spica*, had transited from the Arabian Gulf to the Gulf of Aden to assist USS *Cole*. The vertrep hit was scheduled for mid-morning with the USS *Tarawa* ARG.

As I departed my single-man stateroom and went topside, fresh mug of coffee in hand, I couldn't help but smile at the thought of a fun-filled day. Mother Nature had woke up on the right side of the bed and afforded us a near-perfect October day in the Gulf: clear skies, calm seas, 30 degrees Celsius, and a steady 15-knot wind.

With the 0600 preflight complete, our crew of four gathered for a NATOPS brief on the flight deck. The ship's crew worked around us. They were prestaging the deck with assorted pallets of food, soda and other goods for the vertrep. We briefed the standard items, including what actions to take in the event of an engine failure. Our spirits were high. Before manning up, we headed to the galley to top off our stomachs for the long morning.

All the players maneuvered into position at 0830. USS *Tarawa*, our main customer, was on our starboard quarter, a couple of miles out and closing. Three tri-walls of mail were loaded internally (500 pounds each) in our aircraft and would be dropped off before the vertrep.

I took a final walk around the bird and noticed the prestaged loads were a bit closer than usual to the main-mounts. The aircraft was positioned fore and aft with five feet of load clearance to starboard and three feet to port. I pointed out this situation to my crew chief and second crewman, and we all agreed it would not be a problem. We would have to slide the helo a bit to starboard upon liftoff to avoid contact with the three-abreast, single- and double-stacked loads that surrounded the aircraft astern in a horseshoe manner. We were not worried about having to land immediately into this tight spot, because, after we lifted off mother, the ready deck for fuel and emergencies would be the LHA, not our heavily staged *Spica*. We were golden, unless we had an emergency upon liftoff.

With the tower-reported winds five to port at 15 knots, the takeoff was mine because I occupied the right seat. I had pre-beeped the engines to 103 percent Nf-Nr, and all the gauges looked good. My copilot completed the last few items of the takeoff checklist and said he'd "match my beeps in the hover," a standard practice.

With our crewchief clearing us "up, straight up," I pulled collective and brought the aircraft to a stable hover. When I initiated a pedal turn to port, Murphy's Law cold-cocked us.

I heard it first—an audible omen. On liftoff, my primary scan turned to the horizon, keeping the ship's structure in my peripheral while executing a 90-degree pedal turn. Nearly complete with the turn, I heard what appeared to be an engine winding down. My initial thought was my copilot had not matched my engine beep trim, and we were "drooping" a bit because of our internal cargo and the high-density-altitude conditions of the Gulf. I checked my gauges to see NR falling through 90 percent and the No. 2 engine at topping power. What I actually had heard was the insidious sound of rotor decay, due to the improper acceleration of the No. 1 engine. I announced to the crew, "Nose right, tail left, putting her down." Without further words, the entire crew immediately was aware of our predicament, and instincts took over.

Rotor decay continued as I returned the aircraft to a fore-and-aft position. I reduced collective in an effort to settle to the deck 10 feet below. As we descended a few feet, the Nr passed through 85 percent, and our starboard mainmount hit the top of a single-stacked load. The crewchief instinctively called, "Power!"

I gingerly increased power to avoid drooping any more and settling on top of the load. The rotors groaned louder now as Nr fell through 80 percent. I quickly realized we were not going to make it safely to the deck, so I pulled additional collective to depart the flight deck to port. I nosed the aircraft over and armed the emergency throttle. Our rotors had enough energy left to enable the bird to clear the double-stacked loads by a foot to port. With one good engine, we now looked to prevent an unscheduled, and undesired, swim call in the waters of the Gulf 40 feet below.









# erpowered



When I initiated a pedal turn to port,  
Murphy's Law cold-cocked us.

My crew performed their duties exactly as briefed. My copilot had the APU on line, had dialed in emergency, and had called out altitudes and airspeeds as we cleared the ship. All this action occurred within five to seven seconds from the onset of trouble. Both crewmen had kicked out emergency-escape hatches and announced themselves secured into troop seats.

As my thoughts turned to "flare and cushion" the aircraft for landing, I glanced at my triple tachometer one last time and noted NR passing through 76 percent. The controls were quite sluggish, yet the bird was surprisingly controllable. With the aircraft now at 25 feet and 40 knots, the No. 2 engine came alive. Both pilots and crewchief audibly and visually witnessed NG, T5 and TQ increase on the No. 2 engine. We were dual-engine and had been spared the unwanted swim call.

We headed to the nearby LHA for an uneventful, dual-engine landing. The troubleshooters found the acceleration check on the No. 2 engine required 15 seconds instead of the usual eight. Also, no air came from the P3 line when the crewchief disconnected it from the fuel-control unit, which indicated a failure of the P3-solenoid valve to the open or partly open position.

Fortunately, the second engine had spooled up to avert a possible emergency-water landing, and the crew had executed their briefed duties to near-perfection. A thorough brief, covering all aspects of mission parameters and potential emergencies, can save your life. We decided never again to take off from such a heavily staged deck. ✈

Lt. Murphy flies with HC-5.

# I Think We Just Dropped on a Ship

By Lt. Zach Evans

**W**e were well into Groundhog Day at sea. Operation Enduring Freedom sorties and overhead strike-cap sorties had become routine.

Our squadron had been scheduled for some unit-level training hops to brush up on basic tactics. I was scheduled for my SFWT 3.8 night, high-altitude, section bombing. We were on the 1.5-hour night cycle with no S-3 gas, which meant we would be on ladder at level off.

The brief went fine. My wingman critiqued me on how to brief a new guy, including what to emphasize. The brief covered section roll-ins on smoke in the water, with Mk-76s, using a 090-run-in heading with the wind.

After the brief, we discussed our fuel situation. We were on ladder from the get-go and decided to conserve gas by doing only level deliveries from 20,000 feet. The syllabus flight would be incomplete, but at least I would get some training on procedures. I also would lead a section around the ship at night.

Preflight was normal, and I noticed my jet didn't have a FLIR. I would be relying solely on the goggles for ID. I launched first and headed to the bomb-drop box.

Twenty miles from the waypoint, I went air-to-ground sea search on my radar to look for surface contacts. I set up an orbit at the waypoint, at 20,000 feet, and waited for my wingman to arrive. The moon was shining from the east, and the winds were out of the west. My wingman soon arrived and was also in the sea-search mode. My radar page was clean, and I didn't see anything below with my goggles. I called strike and reported the target area visually checked clear. Strike responded and called for an airborne contact to the south. I went back to my air-to-air set as we joined in combat spread, heading 090. My wingman was on my left, and I called, "In place right," to set up for the smoke drop.

We drove out to 15 miles, fenced in, and went through our air-to-ground checks to manually

drop smokes on the first pass. With my wingman on my right, I called, "Coming right."

My wingman interpreted this call to mean, "In place right."

About three-quarters through the turn, my wingman called blind. I looked to my 2 o'clock and saw him acute. We realized what happened as we rolled out in lead trail. We agreed to drop our smokes as singles on the 090 courseline, two miles before the waypoint. We assumed this plan still would put the smokes relatively close to each other.

My wingman dropped his first smoke, extended five miles, and I dropped a smoke. I told him to turn left as I joined on his left wing in combat spread. We headed back to the west. I couldn't see if the smokes had lit off, and I asked my wingman if he could see them. He said he had contact with two good smokes.

At 15 miles, I called, "In place left." Halfway through the turn, I spotted one of the smokes. I reported, "Tally smoke," and continued my turn. As I rolled out, I bunted over the nose to designate the smoke in the HUD. I noticed the other smoke was off to the right. I climbed to 20,000 feet and got on the ASL heading 070.

I pickled off one Mk-76, and my wingman did the same shortly afterward. About five seconds later, I heard him say, "I think we just dropped on a ship."

In his FLIR, a shadow began to break out behind the light. Then a wake began to appear. The image was clear on the CONRAC in the ready room. Fortunately, we weren't lasing, and the Mk-76s fell short of the moving target. As we passed overhead, the glare of the moonlight on the water receded, and with our goggles, we could see a wake behind the ship.

Just to the south, a couple of miles from the ship, were two smokes about two miles apart. All three lined up in a north-south direction. We called, "Knock it off," and notified strike of a ship in the target area.

We were lucky on this one. As CAG put it, "We dodged a bullet." The first mistake was not doing a thorough sanitization sweep of the area. Two sweeps from 10,000 feet or lower in the target area, 90 degrees out from each other, probably would have picked up the ship.

The second mistake was not redressing the section and dropping our smokes as a pair, instead of in lead-trail. This would have put the smokes closer together. Third, the FLIR can't discern a Mk-58 smoke from 15 miles away. It, however, can detect the hot smokestack of a ship.

We may have been rusty; a thorough brief on how to drop smokes at night would have been a good idea. Discussing what to see and expect could have flagged attention to the chain of events that led to the near-hit of a merchant ship.

And last, QA the training. Nothing wrong with bringing back Mk-76s to the ship if you don't have the gas to train as you briefed.

*Lt. Evans flies with VFA-146.*



# THE TOOL'S IN T

By LCdr. Todd Lewis

**I**t was hurricane season again, and, sure enough, Mother Nature sent one our way. It must have been my lucky day, as I had the honor of “volunteering” to fly an SH-60B aircraft inland. The hurricane evacuation wasn’t to start until 1700.

I was told a tool was missing when I asked for the aircraft book. The maintainer knew the signed-out tool was used only on my aircraft. All the other aircraft already had been released for flight. I then went to the aircraft to help look for the missing speed wrench. Of course, it was nowhere to be found. The aircraft was quarantined, and the search continued.

Twenty minutes later, the maintainers finished looking for the tool. My copilot also went out to look. When everyone was satisfied the tool was not on the aircraft, the maintenance officer released the plane safe for flight. My copilot and I were comfortable with the situation.

As the sun set, the hotel rooms at our destination filled without us. Maintenance control waited for our “Let’s go” call, and I signed out the aircraft. I gathered the other crew members and briefed the flight. We were satisfied our thorough preflight inspection and the maintainer’s tool search were adequate. Convinced the tool wasn’t on our chariot, we started our uneventful flight inland.

After we landed, a crewman decided to take another look behind one of the avionics panels. None of us had looked there before because the maintainer only worked on the outside of the



Photo by Matthew J. Thomas



# THE HURRICANE

aircraft with the tool. "No way is the tool inside a panel," we thought.


By now, you probably have surmised what the crewman found. The entire crew stood there and let out a holy you-know-what when he showed us the missing speed wrench. We put it in a safe place and headed for the hotel.

That night, I reviewed the situation in my mind, deciding what I should have done differently. The obvious answer, in hindsight, is not to fly. The crew had self-perceived pressure to get the multi-million-dollar aircraft away from the approaching hurricane. However, I don't think we let the pressure influence our decision; we were confident we did the right thing.

I realized, in the comfort of my hotel room, that my mistake wasn't asking too few questions;

it was not asking the right question. Using my in-depth training in metaphysics, I should have noted the tool could be only in one place at a time. If it wasn't in the toolbox, it had to be in the aircraft. In preparing for the flight, I proved where the tool was not. I should have focused on proving where the tool was.

The process of elimination is a fine method in some cases, but for tool control, that technique is inadequate. I'm not the only one to share the blame here, but the bottom line is, I signed for the aircraft and took it flying. The spot where the tool was posed little threat to flight safety, but counting on luck is not a smart way to run a tool-control program.

What about the hurricane? It didn't come close to our base. Live and learn as I did. 

LCdr. Lewis flies with HSL-42.

"No way is the tool inside a panel," we thought.



Photo by Matthew J. Thomas



LCdr. Rick Nelson, AW2 Noe Maldonado and Lt. Steven Smith.



# BRAVO Zulu



Lt. Mishelle Mason, LCdr. Kevin Jones, LCdr. Brad Graham

The crew of RS-608 was practicing touch-and-go landings in their C-9 at McChord AFB on a NATOPS-instrument check. During a practice-missed approach at 200 feet AGL, Lt. Mishelle Mason (T3P) added full power and started to climb. As LCdr. Brad Graham (TAC) trimmed the throttle settings for max power, he observed a failure of the left engine. LCdr. Graham cleaned up the aircraft for single-engine climb and took the flight controls. Lt. Mason and LCdr. Kevin Jones (CC) executed the NATOPS procedures for engine failure in flight. The crew landed the aircraft without incident. Postflight inspection by maintenance personnel showed a failure of the engine-driven, fuel-boost-pump shaft caused the engine to flame out.





On Dec. 8, 2001, the crew of Lone Wolf 57 onboard USS Lassen launched to complete a vertrep-qualification flight. With the mission complete, the crew requested a green deck for landing. On short final, at 125 feet and 40 knots, the pilot at the controls, LCdr. Rick Nelson, and the helicopter-aircraft commander, Lt. Steven Smith, noticed torque and power-turbine rapidly decreasing to zero on the No. 2 engine.

LCdr. Nelson completed the NATOPS immediate-action items for an engine failure, while he waved off from the shipboard approach. Lt. Smith finished the pocket-checklist items and determined there was not a divert field within range. The crew did not restart the engine since the cause of the failure was unknown. They decided to perform a single-engine landing to the ship—the last option. The aircrew completed the single-engine-landing checklist, while the ship maneuvered for best winds.

Lt. Smith calculated power was available for a single-engine hover in ground effect. LCdr. Nelson flew the single-engine, no-hover-approach profile and maintained the helicopter within single-engine parameters in the event of a wave-off.

The aircrewman, AW2 Noe Maldonado, backed up the pilots with ground speed and altitude calls. As the aircraft crossed the flight deck, the crew verified power was available for a single-engine hover, and they transitioned to a normal landing.

The electronic control unit on the No. 2 engine had failed, causing the engine flameout.



Capt. Chucky Nolan, USMC

Capt. Chucky Nolan was number four in a division of two F-16s and two FA-18s, flying from Ahmed Al-Jaber airbase in Kuwait, in support of Operation Southern Watch. The outside-air temperature was 105 degrees Fahrenheit, and the aircraft had a heavy ordnance load. On takeoff, Capt. Nolan experienced a left afterburner failure at 125 knots. The aircraft immediately veered to the left and required right rudder inputs to stay on the runway. Because of the heavy ordnance load, he continued with the takeoff, instead of executing a high-speed abort.

Once airborne, he couldn't retract the landing gear because of a left main-landing-gear problem. The initial rate of climb was estimated to be less than 300 feet per minute, but Capt. Nolan was able to climb to a comfortable altitude. Once established in a delta pattern, he dumped fuel to reach landing weight and made an uneventful straight-in landing.

Capt. Nolan had less than 300 hours in the Hornet, but his quick decisions allowed him to handle a serious compound emergency and prevent a mishap.





On the morning of Feb. 23, 2002, a P-3C crew of six on deployment to Keflavik, Iceland, conducted a routine pilot-proficiency flight. An hour and a half into the flight, the aircraft received a call from Keflavik approach, requesting their assistance in a SAR mission. A fishing boat was sinking in frigid waters off the Icelandic coast. The patrol-plane commander, LCdr. Charles Rayl, immediately proceeded to the last known position of the fishing vessel and contacted an Icelandic Coast Guard cutter that was also en route.

Fifteen minutes later, the crew arrived on station and found an empty life raft in the water, with no sign of survivors. At that same time, other airborne assets of the Icelandic Rescue Service arrived on the scene. The P-3 crew kept a watchful eye on the site of the sinking and passed positions of possible survivors to an Icelandic Coast Guard helicopter crew, who began pulling fishermen from the near-freezing water. For two and a half hours, the P-3 crew assisted in the SAR effort until they reached their bingo fuel. By day's end, three of the four fishermen were found and rescued because of the quick response, adaptability and flexibility demonstrated by this aircrew.

The aircrew also included Lt. Gil Gay and Ltjg. Gary White, patrol-plane pilots; AE1 Brian Bashant and AD1 Diana Fiordiliso, flight engineers; and AW2 Phillip Hutchens, acoustic-systems operator.

# BRAVO Zulu



app. September 2002



Stork with help from flea presents:

# BROWNSHOES IN ACTION COMIX

"The kind real aviators like"

Contributed by Lt. Ward Carroll, VF 32

The following is a presentation  
of



the all-safety network

## Classic

"We're manning up our fighters for the afternoon go, I've got my gougest RIO for the radar locks, you know. Strapping on my airplane with the Martin-Baker seat, crank the Pratt and Whitneys; Jee, the whine sounds pretty neat."

BOOM, BOOM, BAM!  
BOOM, BOOM, BAM!

OPREP-3  
"Weather rap"  
meet OPREP-3  
Koch Fitting Records.

Any day now, Champ

### Instrumental part



"The weather guessers forecast sounded crummy, this is true, we had to gaff him off though 'cause the sky is nice and blue. We'll just be gone an hour. Hey, that's just a little while, the Tomcat chugs the JP like it's going out of style."



Another  
round, barkeep

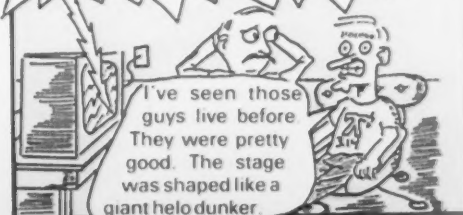
BOOM, BOOM, BAM!  
BOOM, BOOM, BAM!

It's Miller time, the Bogey's killed, the jets are RTB, but what is this? The field is closed?! No Happy Hour for me. The thunder boomers slamming hail all over the place; it looks like we're diverting to an Air Force base (With egg on our face.) (We forgot our approach plates.)

OPREP-3  
"Weather rap"  
meet OPREP-3  
Koch Fitting Records.

BOOM, BOOM, BAM!

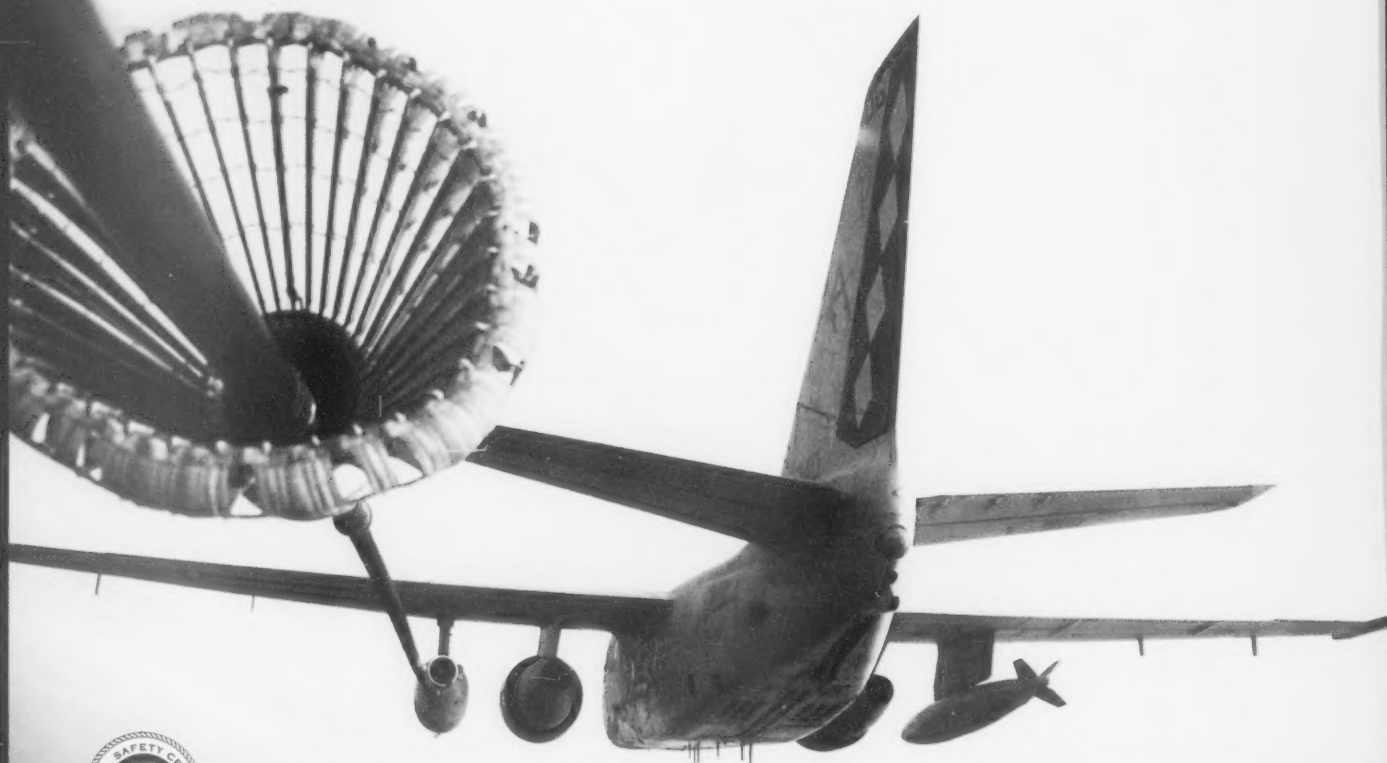
Yes! That's the new one from "OPREP-3." If you missed their concert at the NATOPS review conference don't despair. They'll be warming up "bird strike damage" on the first leg of their upcoming U.S. tour. This portion of safety television has been sponsored by the folks at Face Curtain Locking Tabs, Incorporated



## Ready Room Gouge

The only time an aircraft  
has too much fuel on board  
is when it is on fire.

-Sir Charles Kingsford Smith, sometime before his death in the 1920s



[www.safetycenter.navy.mil](http://www.safetycenter.navy.mil)

Photo by PH3 J. Scott Campbell

